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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q83093

Kenichiro KATAOKA, et al.

Appln. No.: 10/505,228

Group Art Unit: 1624

Confirmation No.: 2360

Examiner: Brenda Libby COLEMAN

Filed: August 20, 2004

For: PYRROLOPYRIMIDINE DERIVATIVES

INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §§ 1.97 and 1.98

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure under 37 C.F.R. § 1.56, Applicant hereby notifies the U.S. Patent and Trademark Office of the documents which are listed on the attached PTO/SB/08 A & B (modified) form and/or listed herein and which the Examiner may deem material to patentability of the claims of the above-identified application.

One copy of each of the listed documents is submitted herewith, except for the following: U.S. patents and/or U.S. patent publications; and co-pending non-provisional U.S. applications filed after June 30, 2003.

The present Information Disclosure Statement is being filed (without a Statement Under 37 C.F.R § 1.97(e)) after the later of three months from the application's filing date and the mailing date of the first Office Action on the merits, but before a Final Office Action, Notice of Allowance, or an action that otherwise closes prosecution in the application (whichever is earlier), and therefore the statutory fee of \$180.00 is being charged to Deposit Account No. 19-4880.

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In compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents, Applicant submits the following explanations: All documents cited are discussed in background of the invention in the specification of the present application on pages 8-11, and the relevance of such documents is described therein.

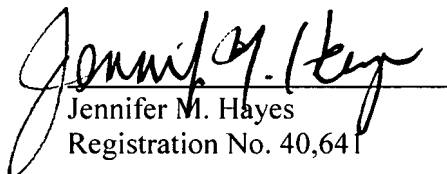
The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicant does not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account. A duplicate copy of this paper is attached.

Respectfully submitted,

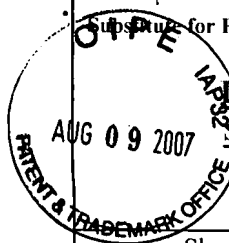
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Jennifer M. Hayes
Registration No. 40,641

Date: August 9, 2007

Supplement for Form 1449 A & B/PTO <div style="text-align: center;"> INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i> </div>				<i>Complete if Known</i>		
				Application Number	10/505,228	
				Confirmation Number	2360	
				Filing Date	August 20, 2004	
				First Named Inventor	Kenichiro KATAOKA	
				Art Unit	1624	
				Examiner Name	Brenda Libby COLEMAN	
				Attorney Docket Number	Q83093	
Sheet		1	of	4		



U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number	Kind Code ² (if known)		
		US			
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FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Translation ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ <i>(if known)</i>			
		WO	0141768	A2	06-14-2001	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (C.N.R.S)	
		WO	0160374	A1	08-23-2001	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (C.N.R.S)	Abstract
		WO	9816528	A1	04-23-1998	CHIRON CORPORATION; THE REGENTS OF THE UNIVERSITY OF CALIFORNIA	
		WO	9965897	A1	12-23-1999	CHIRON CORPORATION	
		WO	0017184	A1	03-30-2000	MITSUBISHI CHEMICAL CORPORATION	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city, and/or country where published.	Translation ⁶
		WOODGETT, J.R., "Acommon denominator linking glycogen metabolism, nuclear oncogenes and development.", Trends in Biochem. Sci., May 1991, 177-181, 16, Elsevier Science Publishers Ltd. UK	
		EMBI, N., RYLATT, D.B., et al., "Glycogen synthase kinase-3 from rabbit skeletal muscle. Separation from cyclic-AMP-dependent protein kinase and phosphorylase kinase.", Eur. J. Biochem., 1980, 519-527, 107, FEBS	
		WELSH, G.I., PROUD, C.G., "Glycogen synthase kinase-3 is rapidly inactivated in response to insulin and phosphorylates eukaryotic initiation factor eIF-2B.", Biochem. J., 1993, 625-629, 294.	
		CROSS, D.A., ALESSI, D.R., et al., "The inhibition of glycogen synthase kinase-3 by insulin or insulin-like growth factor 1 in the rat skeletal muscle cell line L6 is blocked by wortmannin, but not by rapamycin: evidence that wortmannin blocks activation of the mitogen-activated protein kinase pathway in L6 cells between Ras and Raf.", Biochem. J., 1994, 21-26, 303	
		SAITO, Y., VANDENHEEDE, J.R., et al., "The mechanism by which epidermal growth factor inhibits glycogen synthase kinase 3 in A431 cells.", Biochem. J., 1994, 27-31, 303	
		NIKOULINA, S.E., CIARALDI, T.P., et al., "Potential role of glycogen synthase kinase-3 in skeletal muscle insulin resistance of Type 2 diabetes.", Diabetes, February 2000, 263-271, 49	

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kind Codes of USPTO Patent Documents at www.uspto.gov, MPEP 901.04 or follow the hyperlink from the title of the document to the intranet. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST. 3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to indicate here if English language Translation is attached.

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		WO	0018758	A1	04-06-2000	MITSUBISHI CHEMICAL CORPORATION	
		WO	0170683	A2	09-27-2001	MITSUBISHI-TOKYO PHARMACEUTICALS, INC.; SANOFI-SYNTHELABO	
		WO	0170729	A1	09-27-2001	SANOFI-SYNTHELABO; MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	
		WO	0170728	A1	09-27-2001	SANOFI-SYNTHELABO; MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	
		WO	0170727	A1	09-27-2001	SANOFI-SYNTHELABO; MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	

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		ELDAR-FINKELMAN, H., ARAGAST, G.M., et al., "Expression and characterization of glycogen synthase kinase-3 mutants and their effect on glycogen synthase activity in intact cells.", Proc. Natl. Acad. Sci. USA, September 1996, 10228-10233, 93	
		ELDAR-FINKELMAN, H., KREBS, E.G., "Phosphorylation of insulin receptor substrate 1 by glycogen synthase kinase 3 impairs insulin action.", Proc. Natl. Acad. Sci. USA, September 1997, 9660-9664, 94	
		ELDAR-FINKELMAN, H., SCHREYER, S.A., et al., "Increased glycogen synthase kinase-3 activity in diabetes- and obesity-prone C57BL/6J mice.", Diabetes, August 1999, 1-5, 48	
		KLEIN, P.S., MELTON, D.A., "A molecular mechanism for the effect of lithium on development.", Proc. Natl. Acad. Sci. USA, August 1996, 8455-8459, 93	
		HU, M., WU, H., et al., "Assisting effects of lithium on hypoglycemic treatment in patients with diabetes.", Biological Trace Element Research, 1997, 131-137, Humana Press Inc.	
		LEROY, K., BOUTAJANGOUT, A., et al., "The active form of glycogen synthase kinase-3 β is associated with granulovacuolar degeneration in neurons in Alzheimer's disease.", Acta Neuropathol, 2002, 91-99, 103	

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		WO	0170726	A1	09-27-2001	SANOFI-SYNTHELABO; MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	
		WO	0170725	A1	09-27-2001	SANOFI-SYNTHELABO; MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	
		WO	0021927	A2	04-20-2000	SMITHKLINE BEECHAM PLC	
		WO	0174771	A1	10-11-2001	SMITHKLINE BEECHAM PLC	
		WO	0109106	A1	02-08-2001	SMITHKLINE BEECHAM PLC	

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		CROSS, D.A., CULBERT, A.A., et al., "Selective small-molecule inhibitors of glycogen synthase kinase-3 activity protect primary neurons from death." Journal of Neurochemistry, 2001, 94-102, 77, International Society for Neurochemistry	
		WILKINSON, D.G., "The pharmacology of donepezil: a new treatment for Alzheimer's disease." Expert Opinion on Pharmacotherapy, 1999, 121-135, 1(1), Ashley Publications Ltd.	
		NONAKA, S., HOUGH, C.J., et al., "Chronic lithium treatment robustly protects neurons in the central nervous system against excitotoxicity by inhibiting N-methyl-D-aspartate receptor-mediated calcium influx.", Proc. Natl. Acad. Sci. USA, March 1998, 2642-2647, 95	
		ROSS, S.E., HEMATI, N., et al., "Inhibition of Adipogenesis by Wnt signaling.", Science, August 2000, 950-953, 289, The American Association for the Advancement of Science	
		BENNETT, C.N., ROSS, S.E., et al., "Regulation of Wnt signaling during Adipogenesis.", The Journal of Biological Chemistry, August 2002, 30998-31004, Vol. 277 no. 34, The American Society for Biochemistry and Molecular Biology, Inc.	
		IKEDA, S., KISHIDA, S., et al., "Axin, a negative regulator of the Wnt signaling pathway, forms a complex with GSK-3 β and β -catenin and promotes GSK-3 β -dependent phosphorylation of β -catenin.", The EMBO Journal, 1998, 1371-1384, vol. 17 no. 5, Oxford University Press	

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		WO	0144206	A1	06-21-2006	CHIRON CORPORATION	
		WO	0144246	A1	06-21-2001	CHIRON CORPORATION	
		WO	0137819	A2	05-31-2001	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (C.N.R.S)	Abstract
		WO	0142224	A1	06-14-2001	MITSUBISHI-TOKYO PHARMACEUTICALS, INC.	
		WO	0149709	A1	07-12-2001	RAMOT UNIVERSITY AUTHORITY FOR APPLIED RESEARCH & INDUSTRIAL DEVELOPMENT LTD.	
		WO	0156567	A1	08-09-2001	NOVO NORDISK A/S	
		WO	0185685	A1	11-15-2001	CONSEJO SUPERIOR INVESTIGACIONES CIENTIFICAS	
		WO	0181345	A1	11-01-2001	WELFIDE CORPORATION	Abstract

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		GAT, U., DASGUPTA, R., et al., "De novo hair follicle morphogenesis and hair tumors in mice expressing a truncated β -catenin in skin.", Cell, November 25, 1998, 605-614, 95, Cell Press	
		HOEFLICH, K.P., LUO, J., et al., "Requirement for glycogen synthase kinase-3 β in cell survival and NF- κ B activation.", Nature, July 2000, 86-90, 406, Macmillan Magazines Ltd.	
		BEALS, C.R., SHERIDAN, C. M., et al. "Nuclear export of NF-ATc enhanced by glycogen synthase kinase-3.", Science, March 28, 1997, 1930-1933, 275, The American Association for the Advancement of Science	
		Meijer, L., THUNNISSEN, A-MWH, et al., "Inhibition of cyclin-dependent kinases, GSK-3 β and CK1 by hymenialdisine, a marine sponge constituent.", Chemistry & Biology, 2000, 51-63, vol. 7 no. 1, Eslevier Science Ltd.	
		COGHLAN, M.P., CULBERT, A.A., et al., " Selective small molecule inhibitors of glycogen synthase kinase-3 modulate glycogen metabolism and gene transcription.", Chemistry & Biology, 2000, 793-803, vol. 7 no. 10, Eslevier Science Ltd.	
		LEOST, M. SCHULTZ, C., et al., " Paullones are potent inhibitors of glycogen synthase kinase-3 β and cyclin-dependent kinase 5/p25.", Eur. J. Biochem., 2000, 5983-5994, 267, FEBS	

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